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EXAMINER	
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ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/955,731	RIBAS-CORBERA ET AL.	
	Examiner	Art Unit	
	SHAWN AN	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *67-69 and 71-132* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *67-69 and 71-132* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/12/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

1. The request filed on 1/12/09 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 09/955,731 is acceptable and a RCE has been established. An action on the RCE follows.

Response to Amendment

2. As per Applicant's instructions as filed on 1/12/09, claims 67, 71-72, 92, 95-96, 108, 117, 121, 128-130, and 132 have been amended, and claims 1-66 and 70 have been canceled.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Independent claim 132 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 132 reciting "non-volatile storage medium" is considered non-statutory subject matter, since Applicant's specification defines the storage media, which includes "or any other medium which can be used to store the desired information and which can be accessed by the computing device (120)", wherein this definition encompasses a carrier wave or signal, which is non-statutory subject matter (Applicant; page 7, line 20 through page 8, line 5).

Response to Remarks

5. Applicant's remarks as filed on 1/12/09 have been fully considered but they are not persuasive.

The Applicant presents an argument of which Ozkan and Hurst prior art references do not teach or suggest:

i) multiple sets of parameters indicating different and alternative combination of rate parameter and decoder buffer size parameter for the same video images.

However, after careful scrutiny of the cited prior art references, the Examiner must respectively disagree, and maintain the grounds of rejection for the reason that follow.

In response to argument i), Ozkan et al discloses multiple sets of parameters indicating different and alternative combination of rate parameter and decoder buffer size parameter for the same video images (col. 3, lines 48-67 and col. 4, lines 1-21 for the rate parameter; col. 11, lines 1-36 for the decoder buffer size parameter for each individual channel)(Equations 7 and 8)(col. 9, lines 10-36; col. 10, lines 54-67; col. 12, lines 14-61).

Furthermore, Applicant's remarks/arguments with respect to amended claims have been carefully considered but are moot in view of the following new ground(s) of rejection incorporating previously cited prior art references.

Claim Rejections - 35 U.S.C. § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 67-77, 79-97, 99-110, 112-116, 121-122, 124-125, and 126-132 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozkan et al (5,933,451) in view of Hurtst Jr. (6,459,811 B1).

Regarding claims 67, 70, 92, 99, 108, 112, 121, 128, 130, and 132, Ozkan et al discloses a computer implemented method, a computer readable medium storing

programs for causing a computer system to perform a method (col. 5, lines 63-67; col. 6, lines 1-29), and a system comprising:

receiving a number parameter that indicates how many sets of reference decoder parameters [*note that the reference decoder has been used as adjective term(s)*] being signaled for a given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for a given video clip (GOP period) of a single bit stream (col. 9, lines 10-36; col. 11, lines 1-57);

receiving multiple sets of reference decoder parameters signaled for a given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for a given video clip (GOP period), wherein each of the multiple sets comprise a rate parameter (R*min*, R*max*) and a decoder buffer size parameter (buffer size), and wherein each of the multiple sets represents a different point along a rate-decoder buffer size curve for the given video clip, and wherein each of the multiple sets indicates a different and alternative combination of rate parameter and decoder buffer size parameter for the same video images in the given bit stream of encoded data for the given video clip (col. 3, lines 48-67 and col. 4, lines 1-21 for the rate parameter; col. 11, lines 1-36 for the decoder buffer size parameter for each individual channel)(Equations 7 and 8)(col. 9, lines 10-36; col. 10, lines 54-67; col. 11, lines 1-17; col. 12, lines 14-61);

a module for determining an operating condition using any of the multiple sets, wherein the operating conditions indicates peak rate or decoder buffer size for decoding encoded data for the given video clip (GOP period), and wherein the multiple sets are concurrently available for use in the determining the operating conditions (col. 10, lines 54-67; col. 11, lines 1-17; col. 12, lines 14-61); and

at a decoder, receiving and decoding the encoded data for the given video clip in accordance with the operating condition (col. 11, lines 18-55; col. 12, lines 14-61).

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to recognize the each of the multiple sets could represent a different leaky bucket model for the given bit stream of encoded data for the given video clip for an obvious reason of buffer management.

Ozkan et al does not seem to particularly disclose at a video decoder receiving and determining all of the methods above, and receiving for a reference decoder model that specifies constraints on fluctuations of a bitstream of encoded data for the given video clip.

However, a video decoder is conventionally well known in the art.

Furthermore, Hurtst, Jr. teaches at a video decoder (Fig. 3, 330) receiving compressed video data and performing decompressing so as to display video data, and data transmission of compressed video data comprising receiving for a reference decoder model that specifies constraints on fluctuations of a bitstream (comprises video clip) of encoded video data in order to prevent the buffer overflow/underflow (col. 4, lines 10-29).

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to incorporate Hurtst, Jr's teaching as above so that at the video decoder, receive and determine all of Ozkan's (compression) methods above so as to perform decompression for displaying video data, and also receive for a reference decoder model that specifies constraints on fluctuations of a bitstream of encoded data for the given Ozkan's video clip in order to prevent the buffer overflow/underflow by the decoder.

Regarding claims 68-69, 93-94, 109, 122, and 129, Ozkan et al discloses the decoder buffer size and the rate parameter for each of the multiple set being different (col. 10, lines 54-67; col. 11, lines 1-17)

Regarding claims 71 and 96, Ozkan et al discloses:

receiving multiple additional sets of reference decoder parameters signaled for the given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for the given video clip (R_{min}, R_{max}; Encoder Buffer Size, E);

re-determining the operating condition using any of the multiple additional sets, (col. 10, lines 54-67; col. 11, lines 1-17; col. 12, lines 14-44); and

at the decoder, receiving and decoding the encoded data for the given video clip in accordance with the re-determined operating condition (col. 11, lines 18-55).

Regarding claims 72 and 95, Ozkan et al discloses receiving a number parameter that indicates how many sets of reference decoder parameters being signaled for the given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for the given video clip (col. 9, lines 10-36; Col. 11, lines 1-57).

Regarding claim 73, Ozkan et al discloses selecting a parameter of one of the multiple received sets (col. 10, lines 54-67; col. 11, lines 36-57).

Regarding claims 74-75, 113, 125, and 131, Ozkan et al discloses interpolating between parameters of two of the multiple sets (Eq. 8, encoder buffer size *En)* (col. 10, lines 54-67), and extrapolating from a parameter of one of the multiple sets (Eq. 7, encoder buffer size *E)* (col. 10, lines 54-67).

Regarding claims 76-77, Ozkan et al discloses min peak rate and setting the min peak rate based upon at least one of the decoder buffer size parameters, and setting the decoder buffer size based upon at least one of the rate parameters of the multiple sets (Col. 11, lines 1-57; see also Eq. 8).

Regarding claims 79, 97, 110, and 124, the Examiner takes official notice that a pre/post processor such as band (low or high) pass filter is well known in the art for filtering video comprising a single video bitstream (comprises video clip) or multiple bitstreams.

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to recognize the number parameter and the multiple sets could be provided as signaled out of band for the given video clip for filtering purposes as desired by an user/designer.

Regarding claim 80, Ozkan et al discloses parameters comprising initial buffer fullness data (col. 11, lines 36-55).

Regarding claims 81 and 101, the Examiner takes official notice that utilizing leaky bucket model for buffer management is well known in the art. Note: see Eyuboglu et al (5,541,852) (Fig. 8, 802).

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to recognize the each of the multiple sets could represent a different leaky bucket model for the given bit stream of encoded data for the given video clip for an obvious reason of buffer management.

Regarding claims 82 and 102, Ozkan et al discloses each of the multiple sets represents a different point along a rate-decoder buffer size curve for the given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for the given video clip (Equations 7 and 8).

Regarding claims 83-84 and 103, Ozkan et al discloses an entire and part of a video sequence (col. 4, lines 63-67; col. 5, lines 1-8).

Regarding claims 85-87 and 126, the Examiner takes official notice that a decoder being implemented in such as a handheld computing device, a PC, and a disk media player is well known in the art for decoding compressed video for displaying video images.

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to recognize the decoder could easily be implemented in such as a handheld computing device, a PC, and a disk media player for decoding compressed video data for displaying reconstructed video images.

Regarding claims 88, 104, and 114, Ozkan et al discloses the peak (maximum) rate corresponding to a transmission rate for a network connection during decoding the encoded data (col. 10, lines 27-37).

Furthermore, the Examiner takes official notice that utilizing a disk drive as a storage device is well known in the art.

Moreover, Ozkan further discloses a bit rate allocator comprising (Fig. 1, 30) plurality of storage devices (32 and 33), the microprocessor (31), and I/O (34).

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to recognize the peak rate corresponding to a drive speed for a disk during decoding the encoded data in order to prevent the buffer overflow and/or underflow.

Regarding claims 89, 105, and 115, Ozkan et al discloses the peak (max) rate corresponding to a transmission rate for a network connection during decoding the encoded data (col. 10, lines 27-37).

Regarding claims 90-91, 106-107, 116, and 127, the Examiner takes official notice that decoding the encoded data during live video (real time) transmission and during on-demand transmission for the given video clip is well known in the art for an obvious reason of decoding encoded video for displaying video images during real time (live) and/or during on-demand such as requested by a plurality of subscribers of cable or satellite system.

Therefore, it would have been considered obvious to one of skill in the art employing Ozkan's reference to recognize decoding the encoded data during live video (real time) transmission and on-demand transmission for the given video clip for an obvious reason of decoding encoded video for displaying video images during real time (live) and/or during on-demand transmission such as requested by a plurality of subscribers of cable or satellite system.

Regarding claim 100, Ozkan et al discloses an initial buffer fullness parameters (col. 10, lines 54-67; col. 11, lines 1-17).

8. Claim 117-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozkan et al (5,933,451) in view of Eyuboglu et al (5,541,852) and Hurst Jr. (6,459,811 B1).

Regarding claim 117, Ozkan et al discloses a computer implemented method comprising:

receiving multiple sets of reference decoder parameters signaled for a given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for a given video clip (GOP period), wherein each of the multiple sets comprise a rate parameter (R_{min}, R_{max}) and a decoder buffer size parameter (buffer size), and wherein each of the multiple sets indicates a different and alternative combination of rate parameter and decoder buffer size parameter for the same video images in the given bit stream of encoded data for the given video clip (col. 3, lines 48-67 and col. 4, lines 1-21

for the rate parameter; col. 11, lines 1-36 for the decoder buffer size parameter)(col. 9, lines 10-36; col. 10, lines 54-67; col. 11, lines 1-17; col. 12, lines 14-61);

processing the multiple sets, wherein the multiple sets are concurrently available for use in the determination of the operating conditions, and wherein the operating conditions indicates peak rate or decoder buffer size for decoding encoded data for the given video clip (GOP period) (col. 10, lines 54-67; col. 11, lines 1-17);

receiving multiple additional sets of reference decoder parameters (R_{min}, R_{max}; Encoder Buffer Size, E) signaled for the given bit stream of encoded data (Fig. 2, 14, via feedback loop 30, Bit Rate Allocator) for the given video clip (GOP period) (col. 9, lines 10-36; col. 10, lines 54-67; col. 11, lines 1-17; col. 12, lines 14-61), and

processing the multiple additional sets, wherein the multiple additional sets are concurrently available for use in re-determination of the operating conditions (col. 10, lines 54-67; col. 11, lines 1-55).

Ozkan et al does not seem to disclose at a video decoder receiving and determining all of the methods above, receiving for a reference decoder model that specifies constraints on fluctuations of a bitstream of encoded data for the given video clip, and multiple sets and additional multiple sets representing a different leaky bucket model for the given video clip.

However, a video decoder is conventionally well known in the art.

Furthermore, Eyuboglu et al teaches variable bit-rate packet video communication system utilizing leaky bucket model for buffer management for given video of a single video bitstream (would comprise video clip) (Fig. 8, 802).

Moreover, Hurtst, Jr. teaches at a video decoder (Fig. 3, 330) receiving compressed video data and performing decompressing so as to display video data, and data transmission of compressed video data comprising receiving for a reference decoder model that specifies constraints on fluctuations of a bitstream (comprises video clip) of encoded video data in order to prevent the buffer overflow/underflow (col. 4, lines 10-29).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing Ozkan's method to incorporate Eyuboglu's teaching as above so that Ozkan's multiple sets and additional multiple sets represent a different leaky bucket model for the given video clip as an efficient way to manage buffer data flow, and also incorporate Hurtst Jr's teaching as above so that the video decoder receives and processes all of Ozkan's (compression) methods above so as to perform decompression for displaying video data, and also receives for a reference decoder model that specifies constraints on fluctuations of a bitstream of encoded video data for the given video clip in order to prevent the buffer overflow/underflow by the decoder.

Regarding claim 118, Ozkan et al discloses the decoder buffer size and the rate parameter for each of the multiple set being different (col. 10, lines 54-67; col. 11, lines 1-17).

Regarding claim 119, Ozkan et al discloses interpolating between parameters of two of the multiple sets (Eq. 8, encoder buffer size *En)* (col. 10, lines 54-67), and extrapolating from a parameter of one of the multiple sets (Eq. 7, encoder buffer size *E)* (col. 10, lines 54-67).

Regarding claim 120, Ozkan et al discloses setting the peak rate based upon one or more of the decoder buffer size parameters of the multiple sets, or setting the decoder buffer size based upon at least one of the rate parameters of the multiple sets (Col. 11, lines 1-57; see also Eq. 8).

9. Claim 78, 98, 111, and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozkan et al and Hurtst Jr., as applied to 67, 92, 108, and 121 above respectively, and further in view of Morris (6,873,629).

Regarding claims 78, 98, 111, and 123, the combination of Ozkan et al and Hurst Jr. does not seem to disclose multiple sets being signaled in a stream header for the given bit stream of encoded data for the given video clip.

However, Morris teaches multiple sets being provided in a stream header for the given video bit stream of encoded data (col. 6, lines 21-36).

Therefore, it would have been considered obvious to a person of ordinary skill in the relevant art employing Ozkan's method to incorporate the Morris' teaching so that multiple sets are signaled in a stream header for the given bit stream of encoded data for the given video clip for an easy identification of the sequence being transmitted to the decoder, since conventionally, a header is known as a notification flag.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to *Shawn S. An* whose telephone number is 571-272-7324.

11. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHAWN AN/
Primary Examiner, Art Unit 2621
1/26/09